



Department of
Defense
Healthcare
Provider's
Briefing

SMALLPO

X 11 Apr 08



**To provide healthcare providers
with an introduction to
smallpox disease
and vaccination procedures**



Key Messages

- Preserving the health and safety of our people is our top concern
- Smallpox vaccine prevents smallpox, but requires very careful use
- Smallpox would disrupt military missions, because it is contagious and deadly
- Smallpox protection helps our War on Terrorism; new threats require new measures of force protection



Smallpox Vaccination:

- Mandatory for personnel assigned to CENTCOM AOR, the Korean Peninsula and USPACOM Forward Deployed Naval Forces for 15+
- Required for Smallpox Response Teams
- Can be given up to 120 days before deployment
- Policy requires ACAM2000 Medication Guide and DoD smallpox trifold distribution
- Recipients must be screened
 - Screening form located at www.smallpox.mil/screeningform





Smallpox in History

- **1776: Smallpox - U.S. forces too weak to capture Quebec**
 - **5,500 smallpox casualties out of 10,000 forces**
 - **George Washington orders variolation of Continental Army against smallpox (archaic procedure, 2% fatal)**
- **1796: Europe (w/o Russia)—smallpox kills 400,000 people, causes 1/3 of blindness**
- **1796: Edward Jenner uses cowpox virus from milkmaid to prevent smallpox in young boy**
- **1812: War Department orders Jennerian vaccination of U.S. troops**
- **1890s: National Anti-Vaccination League, political riots in UK**
- **1919: Citizens outraged that Woodrow Wilson permits smallpox vaccination of Armed Forces**
- **1980: WHO declares Earth free of smallpox**
- **1984: DoD restricts vaccination to recruits at basic training**
- **2002: DoD resumes Smallpox Vaccination Program**
- **2007: FDA approves ACAM2000**
- **2008: DoD begins using new vaccine, ACAM2000**





Epidemiology of Smallpox

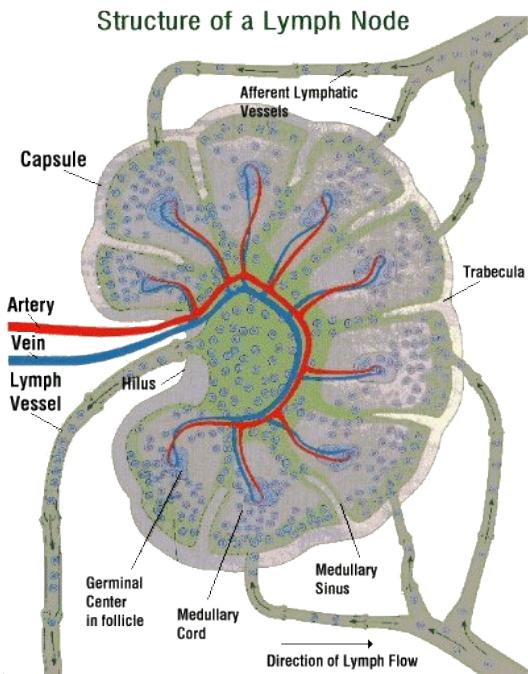
- Smallpox was once worldwide in scope and was declared eradicated from the Earth in 1980
- Smallpox spreads primarily by prolonged (> 1 h) face-to-face contact (< 6.5 feet)
- A smallpox patient is most infectious from onset of rash, marked by temperature > 101°F (38.8°C)
- A smallpox case, on average infects 3 to 5 other people
- 15 days between generations of smallpox cases
- As scabs form, infectivity decreases rapidly





Pathogenesis

- Infectious dose unknown, but believed to be only a few virions
- Natural infection occurs after virus implants on oropharyngeal, respiratory mucosa
- Virus migrates and multiplies in regional lymph nodes
- Symptomatic viremia develops on day 3 or 4
- Secondary viremia begins on 8th day, followed by fever & toxemia
- Virus localizes in small blood vessels of skin and infects adjacent cells



Smallpox

Infection

Timeline

Post-exposure vaccination fully or partially protective through day 3 after exposure.

Average smallpox case infects 3 to 5 people. About half of close contacts are infected.

First symptoms develop 7 to 17 days after exposure; average depicted here as day 11.

After symptoms develop, isolate case. Trace and vaccinate contacts.

Communi-cability	Exposure = Day 0	Symptoms	Day of Symptoms	Disease Progress
Not contagious	Day 1	No symptoms		Virus introduced to respiratory tract
	2			Virus appears in lymph nodes
	3			Virus replicates in lymph system
	4			
	5			
	6			
	7			
	8			
	9			
	10			
Contagious	11	First symptoms	Day 1	Fever, backache, headache, nausea, malaise
	12		2	
	13		3	
	14		4	
Very contagious	15	Rash	5	Macules (spots)
	16		6	Papules (bumps, pimples)
	17		7	
	18		8	
	19		9	
	20		10	
	21		11	Vesicles (blisters)
	22		12	
	23		13	
	24		14	
Contagious	25		15	Pustules (pus-filled blisters)
	26		16	
	27		17	
	28		18	
	29		19	Scabs
Scabs contagious	30		20	
	31			Scars
	32			



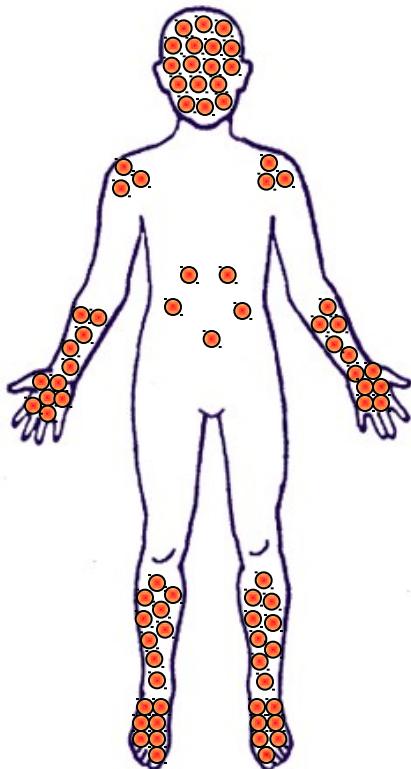
Smallpox Development





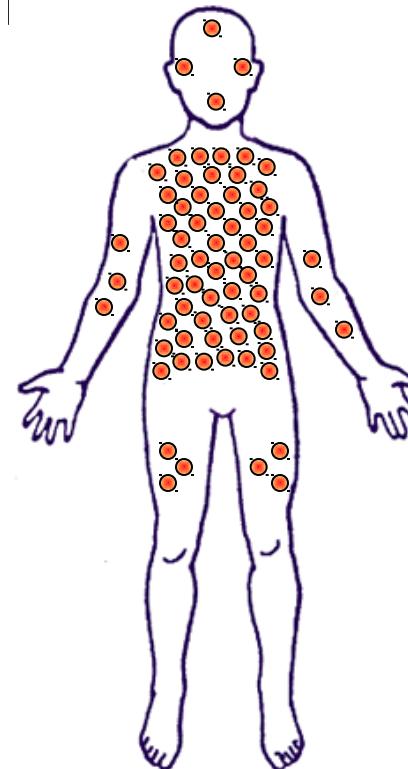
Differential Diagnosis

Smallpox (Variola)



- Lesions appear in 1 to 2 day period
- On any part of body, lesions in same stage of development
- Lesions most dense on face and extremities

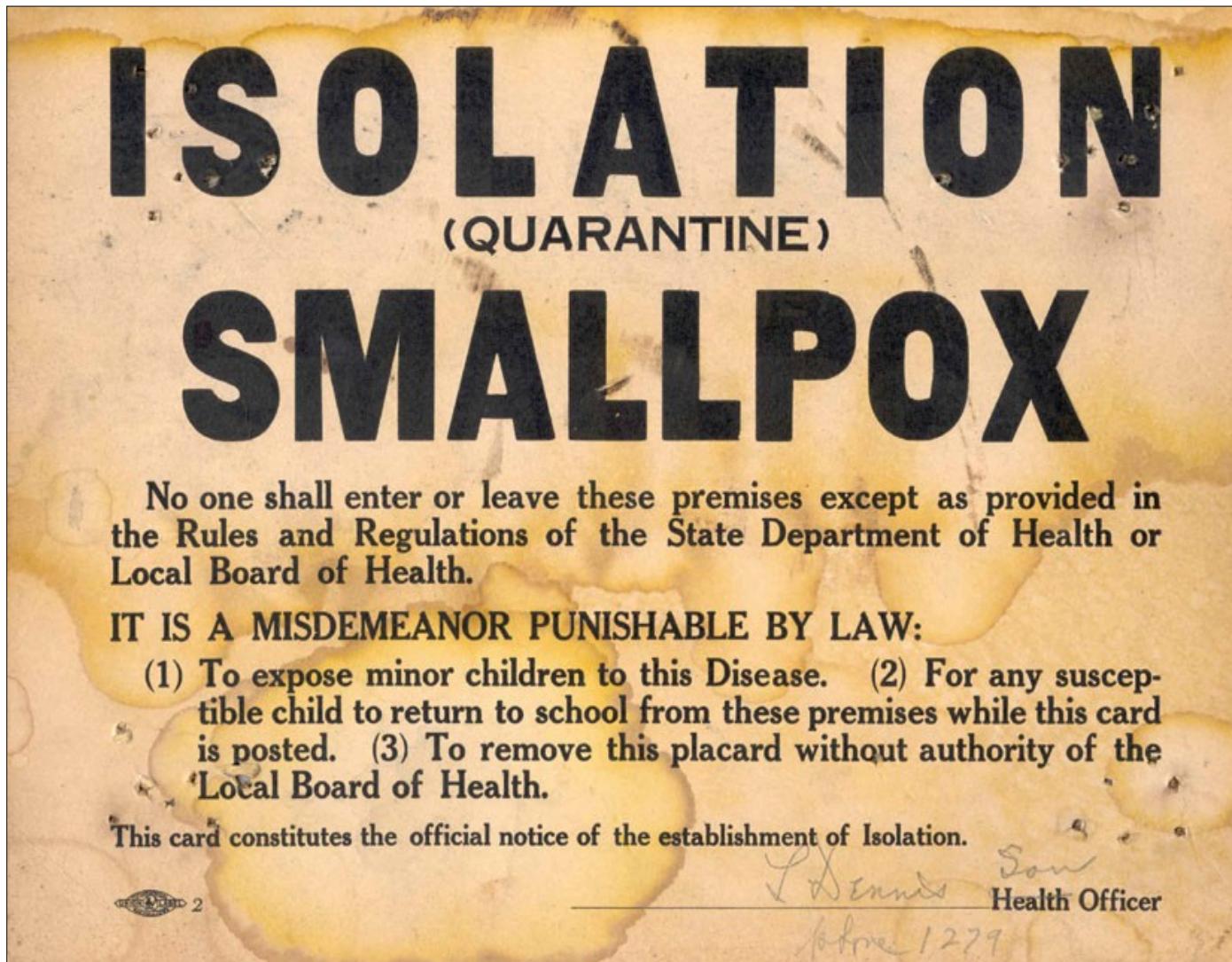
Chickenpox (Varicella)



- New lesions appear in crops every few days
- Lesions at different stages of maturation
- More lesions on trunk than face and extremities



Historical Quarantine Plaque





- Supportive therapy helps reduce fever, pain, etc., but no established treatment for smallpox
- Smallpox vaccination up to 3 days after someone is exposed to smallpox virus will prevent or reduce the severity of smallpox in most people
- Vaccination 4 to 7 days after exposure likely offers partial protection
- Pre-exposure vaccination protects 95% of people from getting smallpox.
- Cidofovir used to treat smallpox under IND protocols, but no human efficacy data



Smallpox would disrupt military missions because it is contagious and deadly

- Before smallpox was eradicated, it killed many millions of people over hundreds of years
- Terrorists or governments hostile to US may have or could obtain variola virus
- A smallpox outbreak would significantly affect military readiness
- An outbreak could restrict movement of troops, aircraft, ships
- S



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Smallpox Vaccine

- The current vaccine in use in the United States is a new cell culture vaccine that is a derivative of the Dryvax vaccine that was used back in the 1970s during the global eradication program.
- Dryvax is made from a virus called *vaccinia*, which is another “pox”-type virus related to smallpox
- A new vaccine, named ACAM2000, is manufactured by Acambis, and is now available.
- Live Vaccinia virus (NYCBOH strain) not smallpox (variola) virus
- Percutaneous inoculation with bifurcated needle (scarification)
 - Pustular lesion/induration surrounding central scab/ulcer 6-8 days post-vaccination
 - Vaccine protects within a few days of vaccination
 - Scar (permanent) demonstrates successful vaccination





Comparison Chart

		DRYVAX® (est. thru 29 Feb 08)	ACAM2000™ (est. after 01 Mar 08)
Manufacturer	Wyeth Lab		Acambis Inc.
Indication	For the induction of immunity against Smallpox		For the induction of immunity against Smallpox
Description	Live vaccinia virus cultured from Calf Lymph		Live vaccinia virus manufactured using cell culture technology
Pharmaceutical Properties	<p>~ The calf lymph is purified, concentrated and dried by lyophilization. During processing, polymyxin B sulfate, dihydrostreptomycin sulfate, chlortetracycline hydrochloride and neomycin sulfate are added.</p> <p>~ Diluent contains: 50% glycerin and 0.25% phenol</p> <p>~ 100 dose vial</p>		<p>~ 2% human serum albumin USP, 0.5-0.7% sodium chloride USP, 5% mannitol USP, and trace amounts of neomycin and polymyxin B</p> <p>~ Diluent for ACAM2000 contains 50% (v/v) Glycerin USP, 0.25% (v/v) Phenol USP in Water for Injection USP supplied in 3mL clear glass vials containing 0.6mL of diluent</p> <p>~ 100 dose vial</p>
Medium	Calf Lymph		Vero (African Green Monkey kidney cells)
Route	Percutaneous using a bifurcated needle traditionally at an upper deltoid site (Also called scarification)		Percutaneous using a bifurcated needle traditionally at an upper deltoid site (Also called scarification)
Dosing	Primary: 3 Jabs Revaccination: 15 Jabs		Primary: 15 Jabs Revaccination: 15 Jabs
Revaccination	DoD policy requires individuals at high risk for exposure, such as laboratory personnel handling variola virus, be re-vaccinated every 3 years. Individuals deemed to be at an increased risk, such as segments of the military must be re-vaccinated every 10 years.		DoD policy requires individuals at high risk for exposure, such as laboratory personnel handling variola virus, be re-vaccinated every 3 years. Individuals deemed to be at an increased risk, such as segments of the military must be re-vaccinated every 10 years.
Storage & Handling	<ul style="list-style-type: none"> ~ Dryvax is shipped and stored at 2-8°C or 36-46°F ~ Discard vaccine 90 days after reconstitution ~ Expiration date subject to extensions 		<ul style="list-style-type: none"> ~ Un-reconstituted ACAM2000 vaccine is shipped and stored at 2-8°C (36-46°F) ~ Un-reconstituted ACAM2000 vaccine should not be exposed to room temperature (23-27°C, 73-81°F) for more than 48 hours ~ After reconstitution, ACAM 2000 vaccine may be administered within 6 to 8 hours at room temperature (20-25°C, 68-77°F) ~ Vaccine must be discarded as a bio-hazardous material 30 days after reconstitution ~ Gloves should be worn when reconstituting or administering ACAM2000 vaccine ~ Expiration dates will not be extended
Required Educational Material	DoD Smallpox individual information trifold brochure		DoD Smallpox individual information trifold brochure AND <i>Medication Guide</i>

Military Vaccine Agency

www.vaccines.mil

(877) GET-VACC

11 Jan 08

www.smallpox.mil/ACAM2000



Smallpox vaccine prevents but requires very careful use

- World Health Organization (WHO) used Dryvax vaccine to eradicate natural smallpox
 - 95% of people are protected within 10 days (some may take longer)
 - Solid protection lasts for 3 years; partial protection lasts longer
 - ACIP recommends people at high risk for exposure be revaccinated every 10 years (pre-event); during an actual event, consider revaccinating if more than 3 years has elapsed since last vaccination
 - Can protect up to 3 days after exposure
- Contains live vaccinia virus, cannot cause smallpox



Screening

- Carefully read & complete screening form; medical professionals available to explain in layman's terms
- Ask for clarification if unsure how to answer screening questions
- Contact family members who may know about childhood history of recurrent rashes like eczema
- Talk to close contacts and family members about the vaccination program and safety precautions
- Ask for assistance at any point, if you or your Family members have safety concerns
- Screening form can be located at: www.smallpox.mil/screeningform

All potential vaccinees must be screened

CHRONOLOGICAL RECORD OF MEDICAL CARE Smallpox Vaccination Initial Note Page 1 of 2		This page may be completed by potential vaccine recipient	
<input type="checkbox"/> Shade Circles Like This--> • <input checked="" type="checkbox"/> Not Like This--> X			
1. Today's Date (MM/DD/YYYY)	2a. GENDER	Male <input type="radio"/>	Female <input type="radio"/>
□□ / □□ / □□□□	2b. First day of last normal menstrual period:	□□ / □□ / □□	
2c. FEMALES: Was your last menstrual period normal and on time?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
2d. Are you currently breastfeeding?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
3. Could someone you LIVE WITH or YOU be pregnant?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
4. Did you ever receive smallpox vaccine?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
4a. IF YES: Were you vaccinated within the last 10 years?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
4b. IF UNSURE: Birth Year □□□□ First Year in Military (if applicable) □□□□			
5. Have you ever had a serious problem after smallpox or other vaccination? (Describe below)			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
6. Do you currently have an illness with fever?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure			
7. Are you allergic to any of these products: poymyxin B, neomycin, latex?			
Before vaccination against smallpox, we want to know if you or your household close contacts have any of several medical conditions.			
Please answer the following questions to the best of your knowledge.			
<input type="checkbox"/> Myself <input type="checkbox"/> Close Contact			
8. Do you OR someone you currently live with NOW HAVE or RECENTLY HAD a problem or take(s) medication that affects the immune system? For example, have or take medication for HIV, AIDS, leukemia, lymphoma, or chronic liver problem; have or take medication for Crohn's disease, lupus, arthritis, or other immune disease; have had radiation or X-ray treatment (not routine X-rays) within the last 3 months; have EVER had a bone-marrow or organ transplant (or take medication for that); or have another problem that requires steroids, prednisone or a cancer drug for treatment?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
9. Do you OR someone you currently live with NOW HAVE or RECENTLY HAD a problem or take(s) medication that affects the immune system? For example, have or take medication for HIV, AIDS, leukemia, lymphoma, or chronic liver problem; have or take medication for Crohn's disease, lupus, arthritis, or other immune disease; have had radiation or X-ray treatment (not routine X-rays) within the last 3 months; have EVER had a bone-marrow or organ transplant (or take medication for that); or have another problem that requires steroids, prednisone or a cancer drug for treatment?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
10. Do you OR someone you currently live with EVER HAD Eczema or Atopic Dermatitis? (Usually this skin condition involves an itchy, red, scaly rash that lasts more than 2 weeks. It often comes and goes.) IF YES or UNSURE: for either you or your close contact, Answer 10a-10e			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
10a. A doctor has made the diagnosis of eczema or atopic dermatitis.			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
10b. There have been itchy rashes that have lasted more than 2 weeks.			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
10c. At least once, there is a history of an itchy rash in the folds of the arms or legs.			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
10d. There is a history of eczema and food allergy during childhood.			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
10e. A doctor has made the diagnosis of asthma or hayfever (including first-degree relatives).			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
11. Are you being treated with steroid eye drops or ointment or have you had recent eye surgery?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
12. Do you have a heart or vessel condition, such as angina, earlier heart attack, coronary artery disease, congestive heart failure, cardiomyopathy, stroke, "mini stroke", chest pain or trouble breathing on exertion?			
<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
13. Check EACH of the following conditions that apply to you: <input type="radio"/> Heart condition before age 50 in mother, father, brother, sister			
<input type="radio"/> Smoke cigarettes now <input type="radio"/> High blood pressure <input type="radio"/> High cholesterol <input type="radio"/> Diabetes or high blood sugar			
14. Do you have a child in home less one year of age?			
<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
15. Do you have other questions or have other concerns you would like to discuss?			
<input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes <input type="checkbox"/> Myself <input type="radio"/> Close Contact			
Explain "other," "unsure," or additional concerns (use additional page). NOTE: If you might have a risk factor for HIV infection, we can arrange for HIV testing. FOR FEMALES: If you might be pregnant, or likely to become pregnant, please tell us. You may need additional pregnancy testing.			
Last Name		Patient's identification (May use mechanical imprint)	
First Name		MI	
Social Security Number			
RECORDS MAINTAINED AT: RANK/GRADE: SEX: DATE OF BIRTH: SPONSOR NAME (or Sponsor SSN) RELATIONSHIP TO SPONSOR (OF FIRST SPONSOR) ORGANIZATION STATUS: DEPT/SVC: <small>Standard Form 800 (Rev. 8-97) Electronic Copy SVP Overprint (2-98)</small>			

Exemptions to Vaccination



Some people should not get smallpox vaccine except in emergency situations.
Medical Exemptions are given for:

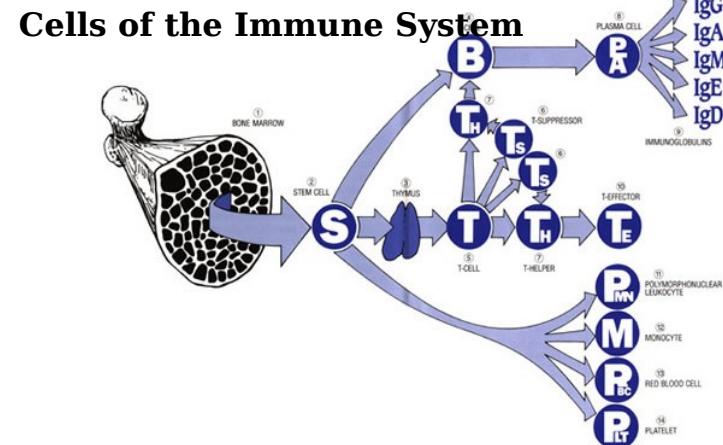
Personal or household contraindication

- Immune system is not working fully (due to disease, medication, or radiation)
- Has or has ever had eczema or atopic dermatitis
 - Red itchy, scaling rash lasting more than 2 weeks, comes & goes
- Has active skin diseases, such as:
 - Burns, psoriasis, contact dermatitis, chickenpox, shingles, impetigo, uncontrolled acne, until it clears up or is under control

Personal contraindication only

Pregnancy

- Has a serious heart disease (such as angina, heart attack, congestive heart failure, other cardiac problem) or ≥ 3 risk factors
- Uses steroid eye drops or ointment or is recovering from eye surgery (1st 8 weeks post-op)
- Breast-feeding (avoid vaccination in families w/ infant < 1 yr old unless separated)
- Is allergic to a vaccine component such as polymyxin B, or neomycin





- HIV infection is a contraindication to smallpox vaccination
- Service members must be up-to-date with Service HIV screening policies before smallpox vaccination
- Civilian personnel will be offered an HIV test before vaccination.
- HIV testing recommended for anyone with a history of risk factors for HIV infection, especially since last HIV test, and not sure of HIV infection status
- Because known risk factors cannot be identified for some people infected with HIV, people concerned they could be infected should be tested



Contact Contraindications

People who have close contact with a person who has a contraindication to smallpox vaccination shall:

- Have alternative housing arrangements or be exempted from smallpox vaccination until household contact situation no longer applies (i.e., 30 days after vaccination)

Unacceptable:

- Permitting vaccinated SM to reside in house, trailer, apartment, or similar close arrangements (e.g., “hot-bunking”) with medically-barred contact

Acceptable:

- Vaccinated SM uses alternate lodging (e.g., barracks, dorm room, tents) on military installation, vessel, or aircraft, or in contracted space
- Berthing barges, familiar to naval forces in shipyards
- Vaccinated SM voluntarily arranges for alternate lodging in privately-owned or managed space is acceptable, if the commander has reasonable expectation that SM will comply with requirement
- Schedule vaccinations shortly before or during 2- to 4-week deployments or family separation

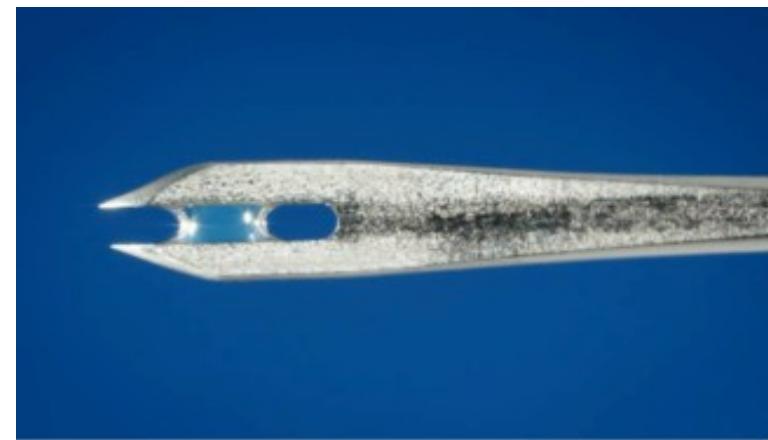
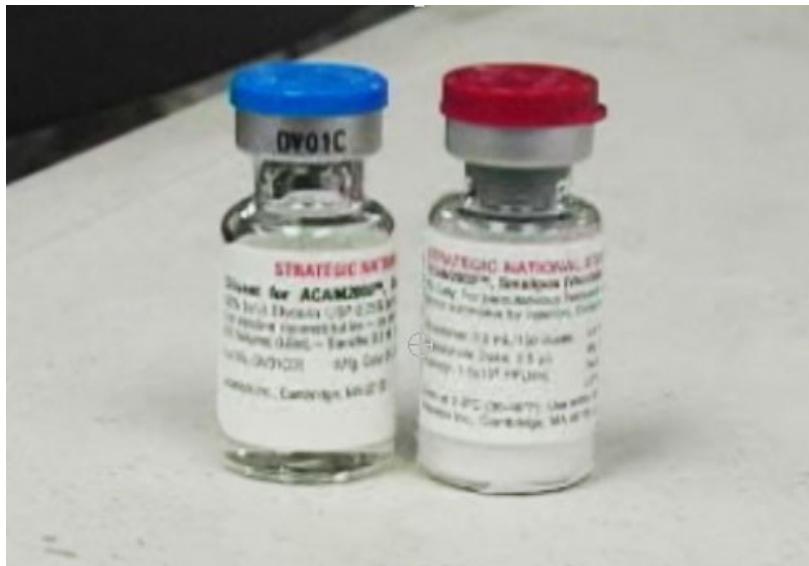


Timing with Other Vaccines

- **Advisory Committee on Immunization Practices (ACIP)** accepts administration of live and inactivated vaccines simultaneously or at any interval.
- Multiple live-virus vaccines should be given simultaneously or separated by 28 days or more
- To avoid confusing potential side effects, separate varicella (chickenpox) and vaccinia (smallpox) vaccinations by 28 days
- Purified Protein Derivative (PPD) can be given simultaneously or 4 weeks after SPV
- **Do not administer other vaccines near smallpox site**



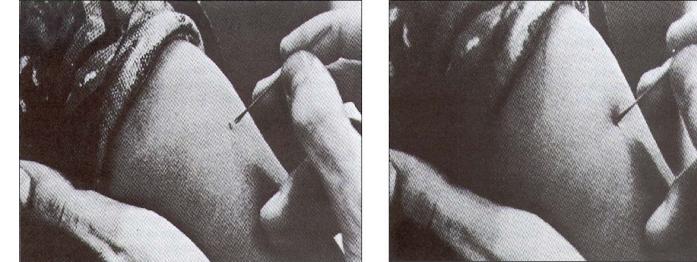
Bifurcated needle



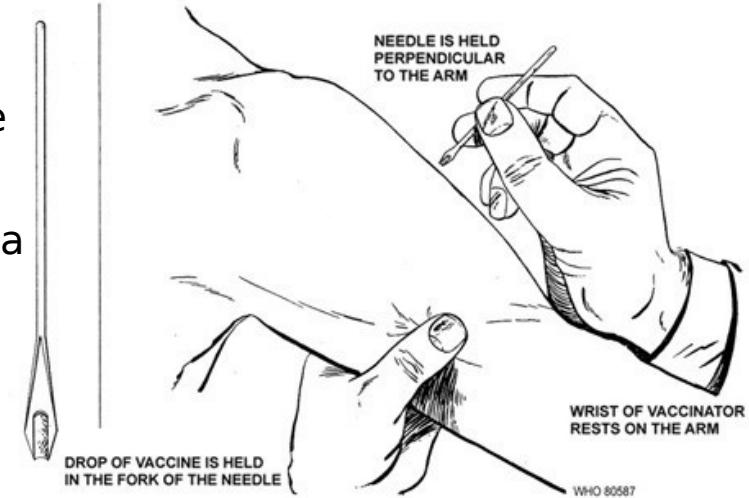
Vaccination Technique



- Vaccinators must have documented smallpox training in accordance with service requirements and must have previous smallpox vaccination and no current contraindications to the vaccine. Civilian vaccination is highly recommended prior to handling or administering smallpox vaccine.
- Site: Skin over deltoid or posterior arm over triceps
 - Do not vaccinate over an old smallpox site, tattoo, scar or open skin.
- Cleanse site with soap & water, then dry (if dirty)
- Use acetone or alcohol only if adequate time is allowed for site to dry (or wipe site dry with gauze to prevent inactivation)
- Multiple-puncture technique uses bifurcated needle inserted vertically into the vaccine vial
- Primary (first) vaccination: 15 punctures, rapidly in 5 mm area, with strokes vigorous enough to cause a trace of blood after 15-20 seconds
- Revaccination: 15 punctures
- Evidence of prior smallpox vaccination (rough descending order of reliability):
 - medical documentation
 - characteristic Jennerian scar
 - entry into U.S. military service before 1984
 - birth in the United States before 1970



MULTIPUNCTURE VACCINATION BY BIFURCATED NEEDLE





Successful Response to Vaccination



DAY 4



DAY 7



DAY 14



DAY²¹

If someone does not get the expected vaccination site reaction,²¹
the original vaccination clinic should be informed



- **Revaccination**

- No take: Give one revaccination with 15 punctures (jabs)
- If a vaccinee does not respond to a second attempt at vaccination, refer for immunologic evaluation

- **Pre-event**

- Revaccinate if > 10 y elapsed since last vaccination

- **Outbreak**

- Revaccinate if > 3 y elapsed since first vaccination



- Screening: Record contraindications in medical record and ITS
- Vaccination: Individual medical records and ITS
- Confirmation of Take
 - Instruct all to come back to clinic if no characteristic lesion
 - Healthcare workers and response team members (traveling into smallpox outbreak area) will have take recorded in their health records and ITS
 - Other personnel should have vaccination take recorded in health records and ITS by medic or provider trained in vaccination evaluation
- Adverse events
 - Medical records, VAERS, VHC access
- USD(P&R): Services will audit immunization tracking systems



Care of Vaccination Site



Vaccine virus remains at the site for at least 30 days and until the skin has healed, and can potentially infect others

Instruct your patients of the following :

- ~~• Don't touch any vaccination site~~
- If you touch it by accident, wash your hands right away
- Don't let others touch your vaccination site or materials that covered it
- Don't let others use a towel used after vaccination until laundered
- Wear sleeves to cover the site
- Wear sleeves at night, if you sleep in bed with someone
- Use bandages; change them every few days
- Discard bandages in sealed or double plastic bags; carefully add bleach if desired
- Keep site dry; bathe normally, but dry the site last, with something disposable (avoid rubbing)
- Avoid swimming or public bathing facilities
- Launder clothing, towels and sheets in hot water with detergent or bleach
- When the scab falls off, throw it away in a sealed plastic bag and wash hands afterwards



Hand Washing & Hand Hygiene

Wash hands with soap and warm water

- Rub hands together vigorously for at least 10 seconds
- Cover all surfaces of the hands and fingers
- Rinse hands with warm water
- Dry hands thoroughly with a paper towel
- Use paper towel to turn off the faucet

Alcohol-based waterless hand rinse, e.g., CalStat®

- Excellent alternative if hands are not visibly soiled
- Apply product to palm and rub hands together, covering all surfaces of hands and fingers, until hands are dry
- May have sticky feel after repeated use
 - wash hands with soap and water as needed



Be extremely careful with contact lens use!

- Wearing glasses until the site heals is preferred
- If contact lenses are used, wash hands thoroughly before touching eyes or



- Smallpox vaccination should be deferred until after pregnancy
- Avoid pregnancy for 4 weeks after vaccination
- If a female is pregnant at the time of vaccination, or if a vaccinee becomes pregnant within 4 weeks after vaccination,
 - Contact Smallpox Vaccine in Pregnancy Registry:
 - 619.553.9255
 - NHRC-birthregistry@med.navy.mil
 - www.smallpox.mil/pregnancy
 - Submit VAERS with Smallpox Pregnancy Supplement
- In an outbreak, personal benefit from vaccination may outweigh risks
- Take care to prevent spread of vaccine virus to children. ALWAYS wash hands before handling (e.g., feeding, changing diapers) and keep site covered with a bandage and sleeves
- Smallpox vaccine not recommended for nursing mothers, as it may put infants in close contact with mother's vaccination site





- Minimize contact with unvaccinated patients until 30 days after vaccination and until scab falls off
- If contact essential and unavoidable, workers can continue to work with patients, including those with immunodeficiencies:
 - If site well-covered and thorough hand-hygiene maintained
 - Semi-permeable bandage (Opsite, Tegaderm, Cosmopore)
- To prevent accumulation of exudates, cover site with dry gauze and apply dressing over gauze
- Change dressing daily (according to type of bandaging and amount of exudate), at the start or end of shift
- Site-care stations: to monitor worker vaccination sites, promote effective bandaging and encourage scrupulous hand hygiene
- Long-sleeve clothing further reduces risk for contact transfer
- Most critical measure: Thorough hand-hygiene after changing bandage or any contact with site



Symptoms Reported After Vaccination

Day 6-8, symptoms after vaccination, n = 5,951, Jan-Apr 2003

• Local itching	62%	Muscle ache	27%
• Feeling lousy	26%	Lymph nodes swell	23%
• Headache	23%	Bandage reaction	16%
• Itchy all over	11%	Fever (subjective)	6.6%
• Local rash	11%	Body rash	2.3%
• Restrict activity	2.4%	Took medication	5.0%
• Outpatient visit	1.1%	Limited duty	0.3%
• Missed work	0.4%	Hospitalized	0.1%

www.smallpox.mil/safety



Serious reactions that may require medical attention

- Accidental spread of virus elsewhere on body or to another person
- Widespread vaccine rash where sores break out away from vaccination site (generalized vaccinia)
- Allergic rash after vaccination (erythema multiforme)
- Inflammation of or around heart (myo-pericarditis)

Life-threatening reactions that need immediate attention

- Serious skin rashes in people such as those with eczema or atopic dermatitis (eczema vaccinatum)
- Ongoing infection of skin with tissue destruction (progressive vaccinia or vaccinia necrosum)
- Postvaccinal encephalitis, inflammation of the brain
- Chest pain or shortness of breath



Treatment of Adverse Events

- Be alert for serious, rare adverse events after vaccination
- Consult the Vaccine Healthcare Centers Network or other specialists as appropriate (allergy-immunology, infectious disease, dermatology, neurology, cardiology, etc.)
- Some conditions respond to vaccinia immune globulin (IV-VIG)
 - Eczema vaccinatum, progressive vaccinia, severe ocular vaccinia, severe generalized vaccinia
 - IV-VIG not effective in treating post-vaccinal encephalitis
- IV-VIG consists of human IgG antibody from people vaccinated with smallpox vaccine
- Contact the CDC Director's Emergency Operation Center (DEOC) to order IV-VIG at (770) 488-7100



Adverse Event Reporting

- Vaccine Adverse Event Reporting System (VAERS)
 - FDA and CDC review 100% of reports submitted
 - Anyone can submit a VAERS form, online preferred
<https://secure.vaers.org>
 - Reporting with medical help results in more detail
- DoD requires a VAERS form for:
 - Loss of duty 24 hours or longer (\geq 1 duty day)
 - Hospitalization
 - Suspected vaccine vial contamination
 - Auto-inoculation or contact vaccinia
- Other submissions encouraged
- Report to VAERS at www.vaers.hhs.gov or call 800-822-7967
- For assistance with VAERS submission contact your local clinic or the VHC Network

AskVHC@amedd.army.mil or www.VHCInfo.org



- Adverse events after DoD or USCG directed vaccinations are line-of-duty conditions
- Someone with an adverse event in a non-duty status possibly associated to any vaccination
 - Seek medical evaluation at a DoD, USCG, or civilian medical treatment facility, if necessary
 - Must report the event to the unit commander or designated representative as soon as possible
 - See local medical department or squadron for guidance
- Commander will determine Line of Duty and/or Notice of Eligibility status, if required



Information Sources

MILVAX Agency

- www.smallpox.mil; www.vaccines.mil/smallpox
- vaccines@amedd.army.mil
- 877.GET.VACC (877.438.8222)

DoD Vaccine Clinical Call Center

- 866.210.6469

DoD Vaccine Healthcare Centers

for help with complicated adverse-event management

- www.vhcinfo.org
- Askvhc@amedd.army.mil
- 202.782.0411

Information for Civilian Healthcare Providers

Call the Military Treatment Facility (MTF) where the member is enrolled

-OR- contact the Military Medical Support Office (MMSO)

- 888.647.6676 (if the member is not enrolled to an MTF)

Smallpox Vaccine in Pregnancy Registry

- NHRC-birthregistry@med.navy.mil
- 619.553.9255



MILVAX





www.vaccines.mil



www.vaccines.mil